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that I employed the same data as Hansen for the figure and dimensions of the Earth, and that my value of P, viz. 3·256989 feet, relates like Hansen's to a point the sine of whose *geocentric* latitude is $\frac{1}{\sqrt{3}}$, whereas it should be the *geographical* latitude, as that is the latitude which enters into Baily's formula from which my value of P is deduced.

In consequence of this, Professor Newcomb finds a discrepancy of 0″·03 between Hansen's value of the constant of parallax and mine when both are derived from the same system of fundamental data; but it has been shown above that no such discrepancy exists.

By a typographical error, the value of P which Professor Newcomb quotes from me is printed as 3·256 89 feet, instead of 3·256989 feet.

Ephemeris for finding the Positions of the Satellite of Neptune, 1880–81. By A. Marth, Esq.

P, angle of position of the minor axis of the apparent orbit in the direction of superior conjunction.

a, *b*, major and minor semi-axis of the apparent orbit.

Long. = longitude of the satellite in its orbit, reckoned from the point which is in superior conjunction with the planet.

Gr. Noon.	P.	*a*.	*b*.	Log. *a*.	Log. *b*.	Long.	Diff.
1880.	°	″	″			°	°
Sept. 1	314·30	16·66	6·51	1·2216	0·8136	112·48	
11	314·24	16·74	6·53	·2238	·8150	4·99	612·51
21	314·14	16·81	6·54	·2257	·8156	257·45	·46
Oct. 1	314·01	16·88	6·54	1·2273	0·8156	149·86	·41
11	313·87	16·93	6·53	·2285	·8149	42·23	·37
21	313·71	16·96	6·51	·2294	·8135	294·57	·34
31	313·55	16·97	6·48	1·2298	0·8115	186·89	·32
Nov. 10	313·38	16·97	6·44	·2297	·8089	79·19	612·30
20	313·22	16·95	6·40	·2292	·8059	331·49	·30
30	313·07	16·91	6·35	1·2282	0·8025	223·80	·31
Dec. 10	312·93	16·86	6·29	·2268	·7989	116·12	·32
20	312·82	16·79	6·24	·2251	·7952	8·47	·35
30	312·74	16·71	6·19	1·2231	0·7917	260·85	·38
1881.							
Jan. 9	312·68	16·63	6·14	·2208	·7884	153·28	612·43
19	312·66	16·53	6·10	·2183	·7854	45·76	·48
29	312·67	16·44	6·06	1·2158	0·7828	298·29	·53
Febr. 8	312·72	16·34	6·04	·2133	·7808	190·87	·58
18	312·79	16·25	6·02	·2109	·7795	83·51	·64
28	312·90	16·17	6·01	1·2088	0·7790	336·20	612·69

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These values are to be interpolated for the times for which the apparent places of the satellite are required, and the position-angles p and distances s are then found by

$$s \sin (P-p) = a \sin \text{long}.$$
$$s \cos (P-p) = b \cos \text{long}.$$

The satellite moves in the direction of decreasing position angles, and will be at its greatest elongations ("nf." in posit P+90 and distance a, "sf." in posit. P−90) and at its conjunctions ("sup." in posit. P and distance b, "inf." in posit. P−180°) at the following hours. Gr. M.T.—

"Sp." Elong.			"Inf." Conj.			"Nf." Elong.			"Sup." Conj.		
1880.		h			h			h			h
Aug.	31	15·2	Sept.	2	2·4	Sept.	3	13·7	Sept.	5	1·0
Sept.	6	12·2		7	23·5		9	10·8		10	22·0
	12	9·3		13	20·6		15	7·8		16	19·1
	18	6·4		19	17·7		21	4·9		22	16·2
	24	3·5		25	14·7		27	2·0		28	13·3
	30	0·5	Oct.	1	11·8	Oct.	2	23·1	Oct.	4	10·4
Oct.	5	21·6		7	8·9		8	20·2		10	7·4
	11	18·7		13	6·0		14	17·3		16	4·5
	17	15·8		19	3·1		20	14·4		22	1·6
	23	12·9		25	0·2		26	11·5		27	22·7
	29	10·0		30	21·3	Nov.	1	8·6	Nov.	2	19·9
Nov.	4	7·1	Nov.	5	18·4		7	5·7		8	17·0
	10	4·2		11	15·5		13	2·8		14	14·1
	16	1·3		17	12·6		18	23·9		20	11·2
	21	22·5		23	9·7		24	21·0		26	8·3
	27	19·6		29	6·8		30	18·1	Dec.	2	5·4
Dec.	3	16·7	Dec.	5	3·9	Dec.	6	15·2		8	2·5
	9	13·8		11	1·0		12	12·3		13	23·6
	15	10·9		16	22·1		18	9·4		19	20·7
	21	8·0		22	19·2		24	6·5		25	17·8
	27	5·0		28	16·3		30	3·6		31	14·9
1881.											
Jan.	2	2·1	Jan.	3	13·4	Jan.	5	0·7	Jan.	6	11·9
	7	23·2		9	10·5		10	21·7		12	9·
	13	20·3		15	7·5		16	18·8		18	6·1
	19	17·3		21	4·6		22	15·9		24	3·1
	5	14·4		27	1·7		28	12·9		30	0 2
	1	11·4	Feb.	1	22·7	Feb.	3	10·0	Feb.	4	21·2

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"Sp." Elong. 1881.	h	"Inf." Conj.	h	"Nf." Elong.	h	"Sup." Conj.	h
Feb. 6	8·5	Feb. 7	19·7	Feb. 9	7·0	Feb. 10	18·3
12	5·5	13	16·8	15	4·0	16	15·3
18	2·5	19	13·8	21	1·1	22	12·3
23	23·6	25	10·8	26	22·1	28	9·3

Addition to the Ephemeris for Physical Observatious of Jupiter.
By A. Marth, Esq.

Though the Ephemeris published on pp. 416–418 of the *Monthly Notices* contains the data necessary for the reductions of observations, it gives them only so far as they do not involve an assumed value of the planet's ellipticity, and supplementary computations are consequently needed.

Bessel has treated the questions connected with observations of an incompletely illuminated planetary disk in the sixth paper of his *Astron. Untersuchungen*, but he considers only observations made with a heliometer or double-image micrometer, so that some additions referring to observations made by means of webs are required.

If $e = \sin \varepsilon_0$ is the eccentricity of the planet's spheroidal surface or $\cos \varepsilon_0$ the proportion of the polar axis to the equatorial diameter, P the angle of position of the polar axis, B the latitude of the earth above the planet's equator, and $\sin \varepsilon = \sin \varepsilon_0 \cos \mathrm{B}$, the outline of the apparent planetary disk will be an ellipse, the minor axis of which, in position-angle P, is $= 2a \cos \varepsilon$, if the major axis or the equatorial diameter is $= 2a$, and the radius of the disk in position-angle p will be

$$= a \cos \epsilon', \text{ if } \tan \epsilon' = \tan \epsilon \,.\, \cos (p - \mathrm{P}).$$

Provided that the limit of illumination passes through those points on the planet's surface which have the Sun's centre in their true horizon, the projection of the limit of illumination upon the disk will be an ellipse, the radius of which in position-angle p is $= a \cos \varepsilon' \cos d'$, if

$$\tan \psi = \tan (p - \mathrm{P}) \cos \epsilon, \quad \text{and} \quad \tan d' = \tan d \cos (\psi - w),$$

where d and w have the same significance as in Bessel's paper.

The visible disk of the planet is generally composed of two half-ellipses, the direction of their common diameter or of the line of cusps being in position-angle

$$\mathrm{P} + w_1 \mp 90°, \quad \text{where} \quad \tan w_1 = \tan w \cos \epsilon.$$

The limit of illumination is visible in the two quadrants adjoin-